NLC
الإنـــارة الوطنيـة
National Lighting

NLC ACADEMY
EPISODE 75

IEC 62305

120 seconds

EN · العربية

PRACTICAL ELECTRICAL KNOWLEDGE

Lightning Protection

IEC 62305 — air termination, down conductors, earthing, and the rolling-sphere idea.

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EPISODE 75 · LIGHTNING PROTECTION

Where does a strike actually hit?

Wherever the leader gets closest first. A lightning protection system gives it a preferred path — catch it, carry it down, and dump it safely to earth.

DEFINITION · 1 OF 2

Air Termination

Catches the strike.

Rods, mesh or catenary on the roof. **Designed by the rolling-sphere method.**

DEFINITION · 2 OF 2

Down Conductor

Carries current to earth.

Multiple parallel paths, short and straight. **Bonded to a low-impedance earth.**

ROLLING SPHERE

LPL I → r =

20 m sphere

Roll an imaginary sphere over the structure. Anything it touches needs protection. Smaller radius = higher protection level (LPL I to IV).

Four levels. Pick one.

Rolling-sphere radius by Lightning Protection Level (IEC 62305-1).

LPL I
Highest
20
m

LPL II
High
30
m

LPL III
Standard
45
m

Rolling-sphere radii to know.

Radius and typical mesh size per LPL (IEC 62305, illustrative).

LPL I	20 m
LPL II	30 m
LPL III	45 m
LPL IV	60 m
Earth resistance target	<10 Ω

A rod with nowhere to go.

An air terminal is useless without a **low-impedance path to earth** and proper bonding. Lightning finds the gap — side-flash to pipes, cables, and people.

NEXT TIME YOU ASSESS A STRUCTURE

Start with the risk assessment.

IEC 62305-2 sets the protection level. The level sets the rolling-sphere radius and the rest.

- Protection level (LPL I–IV)
- Air termination by rolling sphere
- Down conductors & earth termination

PRACTICAL ELECTRICAL KNOWLEDGE

Save this. Send it to a colleague.

NEXT EPISODE

Surge Protective Devices

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